DPM 200

MULTIFUNCTIONAL DIGITAL PANEL MANOMETER

TECHNICAL INFORMATION

The digital manometer **DPM 200** was designed as plug-in type multifunction precision pressure indicator. It is a menu guided universal calibration instrument with storage for measured values and a RS232 interface. The unit can be operated with batteries or permanent external plug-in power supply. The unit offers pressure measurement together with voltage or current measurement with simultaneous display indications. In the calibration mode, the errors of the tested transmitters are automatically calculated. The measured values are evaluated in linear or root function and internally stored.

ADVANTAGES

- **Compact panel dimensions**
- **High accuracy**
- **High long-time stability**
- **Temperature compensation between 10 °C and 40 °C**
- **Selectable pressure units**
- **Easy to use menu system**
- **Simultaneous readout of pressure and electrical measurements**
- **Automatic error calculation with internal data memory**
- **RS232 interface**
- **LCD display with backlight**
- **Zero adjustment with single push button**
- **Programmable pressure switch and leakage test mode**
- **DKD calibration certificate available**

GENERAL DESCRIPTION

The digital manometer **DPM 200** is supplied for gauge-, compound-, differential- or absolute pressure. The microprocessor controlled instrument is designed for panel mounting as well as to fit in customer-specified calibration benches and offers in the area of pressure measurement a wide range of application fields with a very high accuracy.

The pressure display is selectable in seven different pressure units. One additional pressure unit is free programmable. The digital manometer **DPM 200** provides also programmable modes for pressure switches and leakage measurements.

The results are stored internally and available for further processing or printing via the integrated RS232 interface. **Wallace & Tiernan** offers optionally a software for data access and data transfer in the form of an EXCEL macro.

The **DPM 200** is operated with a built-in rechargeable NiMH-battery or with an external universal plug-in power supply. The plug-in power supply can operate with a line voltage of 100 up to 240 V AC. The battery operating time is approx. 18 hours. The battery status is shown in the diagnostic menu.

CONSTRUCTION

The front side of the equipment includes the LCD display and the front membrane keypad for the configuration and the operation of the unit.

The menu-driven operation is indicated in real text displays. The specific pressure range of each instrument is printed on a special label on the front membrane.

Connections for the voltage supply, pressure supply and for the electrical inputs and outputs of the unit are located on the rear side of the instrument.

The material of the panel-through mounted enclosure is NORYL and is manufactored for a snap-in screw fixing. The front menbrane is covered with a polycarbonate material. For mobile use the instrument can be delivered in a robust desk-top enclusure with a stable carrying handle.

The **DPM 200** is available for gauge and absolute pressure ranges from min. 200 mbar up to max. 200 bar.

STANDARD INSTRUMENTS

Pressure range	Resolution		Ordering no.
Gauge pressure ranges			
0 … 200 mbar	0.01	mbar	DPM-200-G-0002
0 … 2 bar	0.0001	bar	DPM-200-G-0020
0 … 20 bar	0.001	bar	DPM-200-G-0200
0 … 200 bar	0.01	bar	DPM-200-G-2000
Compound pressure ranges			
–100 … 0 … 200 mbar	0.01	mbar	DPM-200-C-0003
–1 … 0 … 2 bar	0.0001	bar	DPM-200-C-0030
–1 … 0 … 20 bar	0.001	bar	DPM-200-C-0210
Differential pressure ranges (P > S)			
0 … 200 mbar	0.01	mbar	DPM-200-D-0002
0 … 2 bar	0.0001	bar	DPM-200-D-0020
Static pressure via connection "S" max. 15 bar			
Absolute pressure ranges			
0 … 2 bar	0.0001	bar	DPM-200-A-0020
0 … 20 bar	0.001	bar	DPM-200-A-0200
0 … 200 bar	0.01	bar	DPM-200-A-2000

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DIN EN ISO 9001 certified
DKD-K-02301 DIN EN ISO/IEC 17025

TECHNICAL DATA

DPM 200 desktop enclosure (option)

Rear side of desktop enclosure with pneumatic and electrical connections

PRESSURE MEASURING SYSTEM

Accuracy:
0.04 % of reading ± 3 digits
(including linearity-, hysteresis and temperature error)

Temperature compensation:
Compensation between 10 °C and 40 °C
(error within the specified tolerance by temperature changes less than of 6 °C / hour)

Resolution:
max. 44 000 digits (depending on range)

T_{90} – rise time (FS):
< 1 s (16 conversions / s) with additional display filter
(3 samples / s)

Pressure units:
mbar, bar, kPa, mmHg, PSI, IN.$H_2$0 (20 °C), IN.Hg and one programmable unit.

Display:
LCD display 2 x 16 character, 8 mm height,
with backlight (switchable)

Pressure overload safety:
3 times for pressure ranges up to 2 bar
2 times for pressure ranges up to 200 bar

Pressure overload warning:
Optical warning at 5 % overload (flashing display) and acoustical warning at 10 % overload.

ENVIRONMENT SPECIFICATIONS

Temperature:
Operating temperature   10 °C … 40 °C (compensated)
Storage temperature   –10 °C … 60 °C

Safety issue:
EMC emission   EN 50081
EMC immunity   EN 50082
protection IP 41   EN 60529
CE certified

Medium:
Only use with non corrosive, dry gases.

ELECTRICAL MEASURING SYSTEM

Voltage range (measurement range / accuracy):
0 … ± 32 V DC; 0.04 % FS ± 2 digits

Resolution:
32 000 digits / 0.001 V

Current range (measurement range / accuracy):
0 … ± 32 mA DC; 0.04 % FS ± of 2 digits

Resolution:
32 000 digits / 0.001 mA

Temperature error (current and voltage range):
max. 0.002 % / K

Input impedance:
Voltage input   > 10 MOhm
Current input   < 1 Ohm

Interface:
standard RS232 serial interface

ADDITIONAL FEATURES

Dimensions / weight (L x W x D)**:**
144 mm of x 72 mm x 142 mm, 0.5 kg

Panel cut-out dimensions:
138 + 0.5 (L) x 68 + 0.5 (W) mm

Pressure connections:
1/8" NPT female thread

Ext. Power supply:
100 … 240 V AC, 50 / 60 Hz (±10 %) for
line and battery supply

Electrical connections:
Plug-in screw terminals

Enclosure construction:
Noryl enclosure with screwing bracket fastening
and front membrane covered keypad.

OPTIONS

- Additional pressure ranges and higher accuracy
- Desktop enclosure with carrying handle
- Data transfer software (Excel macro) on disk

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Due to continual product development and improvement,
certain specifications may change without prior announcement.

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